



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,354	11/14/2003	Mikael Bliksted Larsen	Q78495	1437
23373	7590	11/23/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			NGUYEN, TAN QUANG	
			ART UNIT	PAPER NUMBER
			3661	

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/712,354

**Applicant(s)**

LARSEN, MIKAEL BLIKSTED

**Examiner**

TAN Q. NGUYEN

**Art Unit**

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-65 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/14/03</u> . | 6) <input type="checkbox"/> Other: _____  |

42

## **DETAIL ACTION**

### ***Notice to Applicant(s)***

1. This Continuation Application has been examined.
2. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not). Misnumbered claims 28-66 have been renumbered as 27-65. Thus, claims 1-65 are pending.
3. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119, which have been placed of record in the file.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:
5. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. . Regarding claim 5 (as exemplary of claims 5 and 25), the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3661

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scherbatyuk (an article entitled "The AUV Positioning Using Ranges from One Transponder LBL", 1995, pages 1620-1623).

9. With respect to claims 1-5 and 8-18, Scherbatyuk discloses the autonomous under water vehicle positioning using ranges from one transponder LBL having a known position (see the abstract and paragraph II), in which the AUV has an on-board Autonomous navigation system having a gyro and velocity transducer (a dead reckoning navigation system) which not receiving position information from outside AUV (see paragraph I). Scherbatyuk disclose the integrated positioning system which using one transponder long base line (LBL) navigation system and on-board Autonomous Navigation system joint information processing for determining the position of the AUV as described in paragraph II. It is well known that the LBL navigation using the transmitted/received acoustic signals to obtain the ranges from the transponders to the vehicles and used those ranges to calculate the position of the vehicle. Scherbatyuk does disclose the ranges obtained from one transponder but explicitly disclose the arbitrary positions where the ranges is obtained. However, since the AUV is moving and the ranges are obtained and different from each other, it is obvious to one ordinary skill in the art that each range is obtained at different location, which means at the "arbitrary positions". Thus, it is obvious that the ranges of the Scherbatyuk are obtained

from the various arbitrary positions and are used to calculate the position of the AUV in combined with the dead reckoning data.

10. With respect to claims 6, Scherbatyuk further disclose the least squares algorithm is used to compute the position of the AUV (see at least paragraph I).

11. With respect to claims 7, the use of Kalman filter in the AUV is well known at the art and as shown in at least the Yun's article entitled "An Integrated GPS/INS Navigation System for Small AUVs Using an Asynchronous Kalman Filter".

12. With respect to claims 19-65, the limitations of these claims have been noted in the rejections above and in the teaching of Sherbatyuk. They are therefore considered rejected as set forth above.

### ***Conclusion***

13. All claims are rejected.

14. The following references are cited as being of general interest: Morrow (4,070,671), Schwalbe (4,229,809), Chase, Jr. (4,315,326), Polvani (5,357,437), and Gudbjornson (6,163,503).

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Tan Q. Nguyen, whose telephone number is (571) 272-6966. The examiner can normally be reached on Monday-Thursday from 5:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black, can be reached on (571) 272-6956.

Any response to this action should be mailed to:

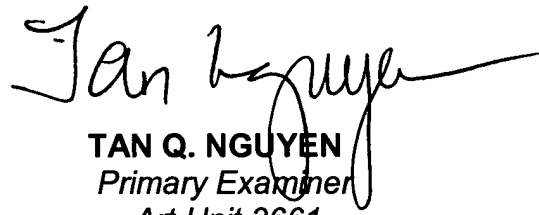
Commissioner of Patents and Trademarks  
Washington, D.C. 20231

or faxed to the Official Fax Center: (571) 273-8300

Art Unit: 3661

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/tqn  
November 10, 2005

  
**TAN Q. NGUYEN**  
*Primary Examiner*  
*Art Unit 3661*